Transportation Data Sources and Opportunities

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Data for Transportation Safety

- **Crash Data** (state crash datasets, EMS datasets, injury outcome datasets, EDR datasets, NASS, FARS)
- **Travel and Driving Data** (IVBSS, Safety Pilot, simulator data, NTS)
- **GIS/Roadway Data** (state and local levels, combined with crash through geo-location information in crash databases)
- **Exposure Data** (licensing data, travel behavior, census, NOPUS, NSUBS)
- **Vehicle Characteristics** (sales, ownership)
Data Sources

Crash datasets from 5-10 years of at least 20 states = ~20 million crashes; some including narratives

National samples of crash data—richer datasets, fewer observations
Data Sources
IVBSS Light Vehicles

- 16 vehicles each with four prototype crash warning systems
- 7 radars, 5 video streams, GPS, >500 other signals at 10 to 50 Hz
Driving Data
Safety Pilot Model Deployment

- 2836 vehicles equipped with communication and data acquisition systems
- 1Tb numeric DAS (like IVBSS)
- 6Tb messages sent
- 16Tb video
- 1Tb messages received by roadside equipment
Safety Pilot Model Deployment

- Project continuing:
  - More vehicles (up to 9000)
  - Less data actively collected per vehicle
  - Indefinite time frame
  - Other data sources available for those who can provide storage
Data Sources

TRAVEL DATA

- National Household Travel Survey (NHTS) collected every ~7 years
- Local travel data may be available (e.g., AATA making data available)
Data Sources

- Roadway characteristics and network
- Crashes
- Driving
Data Sources

- Registrations, vehicle characteristics, and other information is on the web—takes some work to compile
- Vehicle safety ratings and test characteristics available
- NHTSA complaints data
CMISST Datasets and Linkages

- Exposure Data
  - Population Demographics, Travel exposure
- Driving Datasets
  - Surrogates
  - Location and Roadway
  - GIS Databases
- Crash Databases
  - Occupant
  - Vehicle ID Number or Make/Model
- Anthropometry Data
  - Vehicle Characteristics
  - Other State Datasets
Some Key Questions

• What will safety data systems look like in the automated/connected vehicle world of the future?

• How can we enhance the value of existing video data (combined with kinematics) while still maintaining privacy?

• Data linkage—all methods that might enhance the usefulness of existing (federated) datasets

• Driver Behavior—how can we characterize it? How does it feed into vehicle automation?
Thanks for your attention.

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